

Fact Sheet



For Final Renewal Permitting Action Under 45CSR30 and Title V of the Clean Air Act

Permit Number: **R30-03900102-2012**

Application Received: **June 27, 2011**

Plant Identification Number: **03-054-039-00102**

Permittee: **Bayer MaterialScience LLC**

Facility Name: **South Charleston**

Mailing Address: **501 Second Avenue, South Charleston, WV 25303**

Revised: N/A

Physical Location: South Charleston, Kanawha County, West Virginia
UTM Coordinates: 439.65 km Easting • 4,247.00 km Northing • Zone 17
Directions: Traveling on I-64 West from Charleston, take the Montrose Exit (Exit 56) and turn right onto Montrose. Straight ahead is the main plant entrance at the corner of Montrose and MacCorkle Avenue.

Facility Description

The Bayer South Charleston Plant is a chemical manufacturing facility which produces polyether and polymer polyols. The facility is characterized by SIC and NAICS codes 2869 and 325199, respectively.

Emissions Summary

Plantwide Emissions Summary [Tons per Year]		
Regulated Pollutants	Potential Emissions	2010 Actual Emissions ²
Carbon Monoxide (CO)	0.71	0.0007
Nitrogen Oxides (NO _x)	6.51	3.65
Particulate Matter (PM ₁₀) ¹	0.01	See Note 3
Total Particulate Matter (TSP)	0.03	0.02

Regulated Pollutants	Potential Emissions	2010 Actual Emissions ²
Sulfur Dioxide (SO ₂)	0	0
Volatile Organic Compounds (VOC)	> 113	55.6
Hazardous Air Pollutants ⁴	Potential Emissions	2010 Actual Emissions ²
Acetaldehyde	1.2	0.0696
Acrylonitrile	0.38	0.2305
Benzene	0.02	See Note 3
Chlorine	0.71	See Note 3
Ethylbenzene	0.02	See Note 3
Ethylene oxide	1.4	0.0445
Propylene oxide	6.6	0.4517
Propionaldehyde	2.3	0.4505
Styrene	1.1	0.6355
Vinylidene chloride	1.4	0.0095
Xylene	0.02	See Note 3
Hydrogen chloride	2.29	See Note 3

¹ PM₁₀ is a component of TSP.

² Actual emissions are from the 2011 Certified Emissions Statement (CES) Invoice, and represent emissions from January 1, 2010 through December 31, 2010.

³ The actual emission data (if there were any emissions of the pollutant) was unavailable from the 2011 CES.

⁴ The facility is a synthetic minor source of HAPs according to Section 11.0 of permit R13-2561H.

Title V Program Applicability Basis

This facility has the potential to emit 104.2 TPY of VOC. Due to this facility's potential to emit over 100 tons per year of criteria pollutant, Bayer MaterialScience LLC is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 45CSR30.

Legal and Factual Basis for Permit Conditions

The State and Federally-enforceable conditions of the Title V Operating Permits are based upon the requirements of the State of West Virginia Operating Permit Rule 45CSR30 for the purposes of Title V of the Federal Clean Air Act and the underlying applicable requirements in other state and federal rules.

This facility has been found to be subject to the following applicable rules:

Federal and State:	45CSR6	Open burning prohibited.
	45CSR7	To Prevent and Control Particulate Air Pollution from Manufacturing Process Operations.
	45CSR11	Standby plans for emergency episodes.
	45CSR13	Construction/modification permits
	45CSR16	Incorporation of 40CFR60, Federal NSPS
	45CSR21	Control of VOCs Section 46

	WV Code § 22-5-4 (a) (14)	The Secretary can request any pertinent information such as annual emission inventory reporting.
	45CSR30	Operating permit requirement.
	45CSR34	Emission standards for HAPs
	40 C.F.R. 60 Subpart Kb	NSPS for VOL Storage Vessels after July 23, 1984
	40 C.F.R. Part 61	Asbestos inspection and removal
	40 C.F.R. Part 63, Subpart PPP	MACT for Polyether Polyols Production
	40 C.F.R. Part 82, Subpart F	Ozone depleting substances
State Only:	45CSR4	No objectionable odors.
	45CSR21	To Prevent and Control the Emissions of VOCs Sections 37 and 40
	45CSR27	To Prevent and Control the Emissions of Toxic Air Pollutants

Each State and Federally-enforceable condition of the Title V Operating Permit references the specific relevant requirements of 45CSR30 or the applicable requirement upon which it is based. Any condition of the Title V permit that is enforceable by the State but is not Federally-enforceable is identified in the Title V permit as such.

The Secretary's authority to require standards under 40 C.F.R. Part 60 (NSPS), 40 C.F.R. Part 61 (NESHAPs), and 40 C.F.R. Part 63 (NESHAPs MACT) is provided in West Virginia Code §§ 22-5-1 *et seq.*, 45CSR16, 45CSR34 and 45CSR30.

Active Permits/Consent Orders

Permit or Consent Order Number	Date of Issuance	Permit Determinations or Amendments That Affect the Permit (<i>if any</i>)
R13-2561H	3/5/2012	

Conditions from this facility's Rule 13 permit(s) governing construction-related specifications and timing requirements will not be included in the Title V Operating Permit but will remain independently enforceable under the applicable Rule 13 permit(s). All other conditions from this facility's Rule 13 permit(s) governing the source's operation and compliance have been incorporated into this Title V permit in accordance with the "General Requirement Comparison Table B," which may be downloaded from DAQ's website.

Determinations and Justifications

In the following discussion of changes to the operating permit for this renewal, the terms "current permit" or "current Title V permit" mean permit R30-03900102-2006 (MM02), unless otherwise noted or specified by the context.

- I. **45CSR13, Permit R13-2561G.** This permit was issued by the Director on 9/16/2011. The changes under this permit revision will be incorporated into the Title V permit renewal. According to the description of changes on page 1 of this NSR permit, the "proposed changes to the facility include adding Dow's Boiler No. 26 to the approved control devices (Boilers 25 and 27 are already approved)." By comparing R13-2561F with R13-2561G, the following changes are necessary and have been made in the renewal permit:
 - a. Heading 7.0 – The language "B-26" has been added in the parenthesis.
 - b. Condition 7.1.1. – The language "Boiler No. 26 [B-26]" and "E-26" has been added.

- c. Condition 7.1.2. – The language “B-26” has been added.
- d. Condition 7.1.3. – The language “B-26” has been added.
- e. Condition 7.2.1. – The language “B-26” has been added.
- f. Condition 7.4.1. – The language “B-26” has been added to the citation of authority.
- g. Condition 7.4.2. – The language “B-26” has been added to the citation of authority.
- h. Condition 7.4.3. – The language “B-26” has been added.

Permit R13-2561F was included in the current Title V permit; however, underlying requirements 7.2.2. and 7.4.5. (mistakenly numbered 7.4.2. following 7.4.4. in R13-2561F and G) were not in the current Title V. These underlying requirements have been added to the renewal permit as conditions 7.2.2. and 7.4.4.

- II. **45CSR13, Permit R13-2561H.** This Class II Administrative Update permit was issued by the Director on March 5, 2012. The changes under this permit revision will be incorporated into the Title V permit renewal. The changes are given in the evaluation for the permit revision, which are in the following tables. Table A lists changes to the Emission Units table of permit subsection 1.1. Table B lists changes to permit conditions. Table C lists changes in Attachment A of R13-2561H, which is appended to the Title V permit.

Table A – Changes to Emission Units Table

Emissions Unit ID	Emission Point ID	Emissions Unit Description	Control Device	Comments for Title V Incorporation
PP4				
Ex-2424 H-2443	E-658	ACN – “BAT” vent if thermal oxidizer is out of service (condenser/vacuum jet)	Condenser Ex-2424/ H-2443 Vacuum Jets	This row was deleted under PMPO4.
H-2443	E-655	Vacuum Jets	Vent to T.O. E-655 or Alternative “BAT” for ACN E-658	The language “E-655” was added, and existing reference to Y-2124 is retained.
PFS Storage				
T-684	E-684 E-655	PFS Storage	Atm vent (Deadband control) Vents to T.O. E-655	None.
T-686	E-686 E-655	PFS Storage	Atm vent (Deadband control) Vents to T.O. E-655	None.
PMPO Feed System				
T-663	E-655 E-663D	Vinylidene chloride Storage Tank	vents to T.O. E-655. Feeds PMPO #2, #3 & PFS. Atm vent	The existing em.unit description “Vinylidene chloride Feeds PMPO #2, #3 & PFS” is replaced with “Storage Tank”. The existing control device description is changed from “Vents to T.O. Y-2124 & D-2124A” to “atm vent”.
PMPO Support System				
C-2016	n/a	C-2016 ACN treater	APCD	This row entry was already contained in the current Title V permit. No other changes are made for this emission unit.

Emissions Unit ID	Emission Point ID	Emissions Unit Description	Control Device	Comments for Title V Incorporation
Y-2124 and D -2124-A	E-655	Thermal Oxidizer/ Scrubber	Vents to atm	R13-2561H still contains the description “/Scrubber”. However, this will not be included in the Title V since it is stricken in this table. In fact, the current Title V already reflects the changes in this Table A for this row entry; therefore, no change will be made for the renewal permit.
T-112	E-112	Storage	atm vent	This emission unit is added after T-8462 consistent with the underlying permit. The installation date and design capacity are from Table 2 of the engineering evaluation for the underlying permit.
PMPO Storage and Ancillary Equipment				
T-698	E-698	Final Product Storage	atm vent	Em. Unit T-698 was removed from the emission units table.
Building 103 (Flex Polyols)				
H-3192	E-3192	Vacuum system	atm vent (receives flow from #1 & #2)	Em. Unit H-3192 was removed from the emission units table.
Y-3100	E-3100	Dust collection (common) for RX #1, #2, and #3	atm vent (dust)	This emission unit is added after C-3228 consistent with the underlying permit. The installation date and design capacity are from Table 2 of the engineering evaluation for the underlying permit.
H-3192	E-3192	Hogging Vac Jets for #1 and #2 Reactors	Atm vent (receives flow from #1 and #2)	This em. unit is under the #1 and #2 Reaction System. The parenthetical language was added to the control device description.
T-611	E-19A	Crude Polyol stripping	atm vent. Steam jets for T-611	This row entry was already contained in the current Title V permit. No other changes are made for this emission unit.
T-612	E-19A	Crude Polyol stripping	atm vent. Steam jets for T-612	This row entry was already contained in the current Title V permit. No other changes are made for this emission unit.
K-5331	E-3100	Dust Collection (Common)	atm vent (dust)	This emission unit is added after C-3128 consistent with renewal application Attachment D. This source is relocated from Building 196 to Building 103 as per paragraph 1, page 3, of the evaluation for the underlying permit.
Building 196 (Flex Polyol)				
Reactor #7, #8, and #9 Reaction Systems				

Emissions Unit ID	Emission Point ID	Emissions Unit Description	Control Device	Comments for Title V Incorporation
C-5228	E-5228	KOH Addition	atm-vent	Em. Unit C-5228 was removed from the emission units table.
K-5331	E-5331	Dust Collection (Common)	atm-vent (dust)	Em. Unit K-5331 was removed from Building 196 and relocated to Building 103.
C-5328	E-5328	KOH Addition	atm-vent	Em. Unit C-5328 was removed from the emission units table.
C-5428	E-5428	KOH Addition	atm-vent	Em. Unit C-5428 was removed from the emission units table.
T-5340A	E-5340A	Liquid KOH addition	atm vent	This emission unit is added after C-5401 consistent with the underlying permit. The installation date and design capacity are from Table 2 of the engineering evaluation for the underlying permit.
T-5340B	E-5340B	Liquid KOH addition	atm vent	This emission unit is added after T-5340A consistent with the underlying permit. The installation date and design capacity are from Table 2 of the engineering evaluation for the underlying permit.
B196 Final Storage Tanks				
T-698	E-698	Final Product Storage	atm vent	This emission unit is added after T-68 consistent with the underlying permit. The installation date and design capacity are from Table 2 of the engineering evaluation for the underlying permit.

Under PMPO Support Equipment, the row containing scrubber D-2124A was removed. Also, all references in permit subsection 1.1. to D-2124A were deleted, which was in rows containing the following Emission Units: H-2143, T-2148, H-2253, T-2248, H-2343, T-2348, H-2353, H-2443, T-2448, T-109, T-632, T-626, T-631, C-2044, T-616, and T-693. These changes are based upon the removal of D-2124A in permit R13-2561H.

Note that the control device description in R13-2561H for T-684 and T-686 will be changed to “vents to T.O. Y-2124”. The emission point ID is E-655.

Table B – Changes to Permit Conditions

R13-2561H	Title V	Discussion
4.1.1.	4.1.1.	Multiple entries are deleted and added consistent with condition 4.1.1. of R13-2561H.
4.1.3.a.	4.1.3.a.	Deleted “and scrubber system” [C-658] from the condition. Also deleted parenthetical language “and D-2124A”.
4.1.3.b., 4.1.3.c., 4.1.3.d., 4.1.3.e.	4.1.3.b.	R13-2561G contained requirements 4.1.3.a. through 4.1.3.e. The revised permit R13-2561H contains only 4.1.3.a. and 4.1.3.b. This is due to 4.1.3.b., 4.1.3.c., and 4.1.3.e. being deleted from R13-2561G. Condition 4.1.3.d. is renumbered to 4.1.3.b. In general, the Title V condition 4.1.3. will be revised to match the current underlying permit requirement. The reference to 4.1.3.c. in current condition 4.4.1. is deleted. Also, the citation including D-2124A is deleted.

R13-2561H	Title V	Discussion
4.1.4.	4.1.4.	Deleted first paragraph language “and scrubber system”. The last sentence of 4.1.4.a. was deleted. The first clause of 4.1.4.b. was deleted. Condition 4.1.4.d. was deleted. The citation of authority was carried over from the current Title V. The citations of conditions 5.1.2. and 5.1.5. were changed to 5.1.1. and 5.1.3., respectively, to correspond to revised numbering due to changes in the underlying permit.
4.1.5.	4.1.5.	Deleted references to the scrubber system and deleted 4.1.5.d. It was noted that condition 4.1.5.c. still refers to “and scrubber system”. Since this was deleted in the beginning statement of this condition, it will not be included in the Title V condition 4.1.5.c. even though R13-2561H contains the language.
4.1.6.	4.1.6.	The VDC limit in 4.1.6.a. and 4.1.6.b. were deleted and renumbered condition 4.1.6.c. to 4.1.6.a.
4.2.2.	4.2.2.	Underlying conditions 4.2.2.a. and 4.2.2.c. were deleted and remaining requirements renumbered accordingly. The current Title V permit also included conditions 4.2.2.f., 4.2.2.g., and 4.2.2.h.. Current condition 4.2.2.f. pertains to number of catalyst make-up batches, T-2405. Since T-2405 is not deleted in R13-2561H, this monitoring requirement will be carried over to the renewal Title V permit. Current condition 4.2.2.g. pertains to vinylidene chloride (VDC) concentration. According to the evaluation for R13-2561H, VDC is no longer a raw material in the manufacturing process and is deleted throughout R13-2561H. Therefore, this requirement will not be carried over to the renewal permit. Current condition 4.2.2.h. pertains to times that polymer polyols #4 unit is not venting to thermal oxidizer Y-2124. Since this control device remains in R13-2561H, this condition will be carried over. However, the part of the condition referring to VDC in feedstock will be deleted. Finally, reference to scrubber D-2124A is deleted from the citation of authority.
4.4.5.	4.4.5.	Underlying conditions 4.4.5.a. and 4.4.5.c. were deleted, and renumbered others accordingly, which are reflected in the Title V renewal. Current condition 4.4.5.g. concerning VDC concentration is not carried over to the renewal since VDC is no longer a raw material in the manufacturing process. The language “Vinylidene chloride concentration by weight in the recovered alcohol stream,” is removed from current Title V condition 4.4.5.h. as it is carried over to the renewal permit as condition 4.4.5.e. Scrubber D-2124A is removed from the citation of authority since it is no longer in service.
5.1.1.	5.1.1.	The underlying requirement 5.1.1. of R13-2561G was deleted, and a new requirement (regarding Preformed Stabilizer tanks T-632, T-684, and T-686) is now set forth as this permit condition.
5.1.3.	5.1.3.	The underlying requirement 5.1.3. of R13-2561G was deleted, and a new requirement (regarding NSPS Subpart Kb) is now set forth as this permit condition. In other words, 5.1.3. of R13-2561G was deleted, and former Title V condition 5.1.2. was deleted. Former Title V condition 5.1.3. was renumbered as 5.1.2. and 5.1.3. of R13-2561H was added as Title V condition 5.1.3.
5.2.1.	5.2.1.	Changed the compliance reference to 4.1.1. from 5.1.1.
6.1.3.	6.1.3.	Deleted vinylidene chloride from table.
6.1.4.	6.1.4.	Deleted the reference to the scrubber (D-2124A). Deleted vinylidene chloride from table.
6.1.7.	6.1.7.	Deleted the reference to the scrubber (D-2124A).
6.1.13.	6.1.12.	Deleted the reference to the scrubber (D-2124A).

Condition 4.1.4. of the current permit does not cite 45CSR16 Standards of Performance for New Stationary Sources. Since NSPS Subpart Kb is not among the excepted subparts in 45CSR§16-4.1.b., it will be cited in the renewal permit condition.

The citation of authority in the current Title V permit condition 6.4.5. does not specify a permit condition from the underlying permit, only citing “45CSR13 R13-2561”. Since the purpose of 6.4.5. is to maintain records of

monitoring in 6.2.3., it is appropriate that underlying condition 6.4.1. would be applicable. Therefore, 6.4.1. is cited in condition 6.4.5.

Table C – Changes to Attachment A

Emission Point Identification	Source Description	Requested Change:		
		Control Device ID	Service	Comments/ Other Applicable Regs:
E-655	PMPO #1	Y-2124 (S-9) and C-658		
E-655	PMPO #2	Y-2124 (S-9) and C-658		
E-655	PMPO #3	Y-2124 (S-9) and C-658		
E-655	PMPO #4	Y-2124 (S-9) and C-658		
E-655	Tank 626 (Acrylonitrile Tank)	Y-2124 (S-9) and C-658		
E-686	Tank 686 (PFS Storage)	Deadband Control Y-2124 (S-9)		Exempted from Reg 27 by section 5.1 Vents to Thermal Oxidizer
E-655	Tank 663	S-9 and C-658 Y-2124 (S-9)	HAP/TAP	Removed from HAP/TAP service
E-658	PMPO # 4 Vacuum Jet	H-2443	VOC/HAP/TAP	Normal vent mode is to Thermal Oxidizer, Venting through E-658 regulated by Reg 13 requirements. Option to operate while not venting to TO removed. Covered by PMPO requirement now.
E-655	Scrubber	C-658	HAP	Thermal oxidizer discharges to scrubber, but it only removes HCl and CL2 not TAPs. Removed from service
E-655	Tank 631	Y-2124 (S-9) and C-658		
E-655	Tank 632 (PFS Storage)	Y-2124 (S-9) and C-658		
E-655	Tank 616 (Wastewater Storage/Decanter)	Y-2124 (S-9) and C-658		
E-655	Tank 693 (Waste Monomer Tank)	Y-2124 (S-9) and C-658		
E-684	Tank 684 (Preformed Stabilizer)	Deadband Control Y-2124 (S-9)		Exempted from Reg 27 by section 5.1 Vents to Thermal Oxidizer

The revision date and permit number suffix in the lower-left corner of Attachment A were revised to match R13-2561H.

Other Changes under R13-2561H.

- a. Permit section 1.1. – In the rows for C-2090A and C-2090B, made the following changes:
 - i. Emission point ID from “E-25 & E-27” to “E-25, E-26 & E-27”.
 - ii. Control device from “UCC Boiler 25 or 27” to “UCC Boiler 25, 26 or 27”.
- b. Permit section 1.2. – Updated NSR permit revision suffix and its issuance date.
- c. Permit Condition 3.4.1. – None of the Record of Monitoring underlying requirements were included in the current Title V permit. Even though these requirements are identical to Title V condition 3.4.1., they are still applicable requirements that must be included in the operating permit. However, rather than writing these requirements in each permit section, they are cited in permit condition 3.4.1.
- d. Permit condition 6.4.4. – The language “for each piece of equipment listed within Table 6.1.3., of this permit” is not in R13-2561H, condition 6.4.4. This language also limits the applicability of the condition to 6.1.3. when in fact the recordkeeping is for monitoring (6.2.1. and 6.2.2.) that applies to equipment in 6.1.1., 6.1.2., 6.1.3., and 6.1.4.
- e. Permit Section 11.0 – This new Title V section will contain the requirements of R13-2561H, section 11.0. In conditions 11.1.3., 11.4.2., and 11.4.3. the language is changed from “affected by Section 10.0 of this permit” to “affected by Section 11.0 of this permit”.

III. **Changes to Emission Units Table based upon the Renewal Application.** The following changes are made in renewal permit section 1.1. based upon information supplied by the permittee in renewal application Attachment D.

Emission Unit ID	Description of Changes
T-1459	Description from “Cat/Flex Stg” to “Catalyst/Flex Storage”
T-1460	Description from “Cat/Flex Stg” to “Catalyst/Flex Storage”
T-2165	Design capacity from “N/A” to “1,200 gal”.
T-2265	Design capacity from “N/A” to “1,200 gal”.
T-1461	Description from “Cat/Flex Stg” to “Catalyst/Flex Storage”
T-1462	Description from “Cat/Flex Stg” to “Catalyst/Flex Storage”
T-1467	Description from “Cat/Flex Stg” to “Catalyst/Flex Storage”
T-1468	Description from “Cat/Flex Stg” to “Catalyst/Flex Storage”
T-2348 (E-655)	Design capacity from “15,000 gal” to “1,500 gal”.
T-2348 (E-652/E-654)	Design capacity from “N/A” to “1,500 gal”. Year installed/modified from “N/A” to “1992”.
T-2405 (E-2405)	Emission point ID from “E-2405” to “E-2405 and E-657”.
T-103	Description from “Cat/Flex Stg” to “Catalyst/Flex Storage”
T-104	Description from “Cat/Flex Stg” to “Catalyst/Flex Storage”
T-105, T-106, T-107, T-108	Design capacity from “29,480 gal” to “27,000 gal”.
T-8484	Design capacity from “30,400 gal” to “30,000 gal”.
T-8485	Design capacity from “27,700 gal” to “30,000 gal”.
T-109	Design capacity from “20,000 gal” to “21,000 gal”.
T-1451	Year installed/modified from “1964” to “2002”. Design capacity from “14,949 gal” to “15,000 gal”.
T-1458	Description from “#2 ISOP/Polyol” to “#2 ISOP/Polyol Storage Tank”. Design capacity from “29,520 gal” to “28,000 gal”.
T-632	Design capacity from “52,180 gal” to “50,000 gal”.
T-279	Description from “PS-35 Additive Storage” to “Inhibitor Storage”. Design capacity from “3,800 gal 120,000 gal/yr” to “3,800 gal”.

Emission Unit ID	Description of Changes
T-8463	Description from “PS-35 Additive Storage” to “Inhibitor Storage”.
T-683	Year installed/modified from “1960” to “2004”.
T-631	Design capacity from “31,800 gal” to “32,000 gal”.
T-616	Year installed/modified from “1980” to “2010”.
T-112	Design capacity from “31,400 gal” to “28,000 gal”.
T-80	Design capacity from “156,000 gal” to “153,000 gal”.
T-687	Year installed/modified from “1960” to “2007”.
T-695, T-696	Design capacity from “361,700 gal” to “280,000 gal”.
T-70, T-71, T-72, T-73	Design capacity from “182,000 gal” to “204,000 gal”.
T-74	Design capacity from “200,000 gal” to “205,000 gal”.
T-75	Design capacity from “229,100 gal” to “205,000 gal”.
T-263, T-265	Description from “Final Product Stg” to “Final Product Storage”.
T-266	Year installed/modified from “1961” to “2002”.
T-275, T-277	Description from “Final Product Stg” to “Final Product Storage”.
T-685	Design capacity from “49,000 gal” to “48,000 gal”.
T-685, T-688	Description from “Final Product Stg” to “Final Product Storage”.
T-661	Emission point ID from “E-661” to “E-661T”. Design capacity from “11,000” to “11,000 gal”.
T-662	Emission point ID from “E-662” to “E-662T”. Design capacity from “11,000” to “11,000 gal”.
T-659	Emission point ID from “E-659” to “E-659T”. Description from “Glycerine” to “Glycerin”. Design capacity from “25,000 gal” to “20,000 gal”.
C-3128	Year installed/modified from “N/A” to “2003”. Design capacity from “N/A” to “105 gal”.
C-3228	Design capacity from “N/A” to “105 gal”.
H-3192	Description from “Vac” to “Vacuum”.
T-613, T-614, T-667, T-668, T-643, T-644	Design capacity from “14,100 gal” to “15,000 gal”.
T-643	Emission point ID from “E-643” to “E-643T”.
T-644	Emission point ID from “E-644” to “E-644T”.
T-647, T-648	Design capacity from “14,100 gal” to “13,100 gal”.
T-1522	Year installed/modified from “1967” to “2011”.
T-269	Design capacity from “50,400 gal” to “49,000 gal”.
T-273	Design capacity from “10,500 gal” to “8,300 gal”.
C-3328	Design capacity “105 gal” added.
T-674 (E-674) Polyol Starter; 97,400 gal; atm vent; installed 1965	Removed from the Rx #3 Feed System Related section since it is not listed there in application Attachment D. It is listed in the B103 Final Product Storage section of the emission units table in the current permit and in Attachment D.
C-3301	Control device description changed from “vents to vacuum system H-3316 as well” to “Can vent to Vacuum Pump and Jets H-3316 as well”.
T-611 (E-19A), T-612 (E-19A)	Design capacity “14,100 gal” added.
T-672	Design capacity from “97,400 gal” to “98,500 gal”. Year installed/modified from “1959” to “2004”.
T-259	Design capacity from “26,600 gal” to “27,500 gal”.

Emission Unit ID	Description of Changes
T-255	Design capacity from “26,400 gal” to “27,500 gal”.
T-1526	Design capacity from “50,500 gal” to “51,200 gal”.
T-8467	Design capacity from “49,700 gal” to “51,200 gal”. Year installed/modified from “1967” to “2007”.
T-8469	Design capacity from “49,700 gal” to “51,200 gal”. Year installed/modified from “1967” to “2008”.
T-1519	Design capacity from “27,500 gal” to “26,000 gal”.
T-1465	Design capacity from “14,300 gallons” to “14,000 gal”.
T-656, T-658	Design capacity from “14,400 gal” to “14,800 gal”.
T-610	Design capacity from “6,120 gal” to “5,200 gal”. Year installed/modified from “1994” to “2006”.
Ex-3475 / H-3477	Description from “Vac” to “Vacuum”.
T-3478	Added design capacity “170 gal”.
T-3483	Added design capacity “130 gal”.
T-649	Design capacity from “14,100 gal” to “14,400 gal”.
T-650	Design capacity from “14,100 gal” to “12,600 gal”.
T-604 (E-603)	Control device from “Steam jets for T-604, vents to E-603” to “Atm vent steam jets for T-604, vents to E-603”
EX-3575 / H-3577	Description changed from “Vac” to “Vacuum”.
T-3578	Added design capacity “170 gal”.
EX-3675 / H-3677	Description changed from “Vac” to “Vacuum”.
T-3678	Added installation date “1979”. Added design capacity “95 gal”.
T-603	Design capacity from “12,400 gal” to “12,100 gal”.
T-645	Emission Point ID from “E-645 or E-603S” to “E-645T or E-603S”.
T-646	Emission Point ID from “E-646 or E-603S” to “E-646T or E-603S”.
T-269	Emission Point ID from “E-268” to “E-269”.
T-673, T-674	Installation date from “1965” to “2004”.
T-1517	Installation date from “1966” to “2006”.
T-1528	Installation date from “1967” to “2004”.
T-1, T-2	Installation date from “1974” to “2004”.
T-10	Design capacity from “20,800 gal” to “21,800 gal”.
T-18	Design capacity from “20,000 gal” to “22,200 gal”.
C-5201	Control device from “can vent to vacuum jets H-5416 as well” to “Can vent to Vacuum Jets H-5416 and H-5216 vacuum pump as well”.
T-5316	Added design capacity “80 gal”.
C-5301, C-5401	Control device from “can vent to vacuum jets H-5416 as well” to “Can vent to Vacuum Jets H-5416 and H-5216 vacuum pump as well”.
T-20, T-24, T-26, T-19, T-23, T-25	Design capacity from “21,300 gal” to “22,000 gal”.
T-5550, T-5650	Design capacity from “19,700 gal” to “22,200 gal”.
T-5750	Design capacity from “15,000 gal” to “22,200 gal”.
T-5678	Added design capacity “260 gal”. Added installation date “1965”.
T-11, T-12, T-13, T-14, T-15, T-16	Design capacity from “23,000 gal” to “26,000 gal”.
T-60	Installation date from “No date” to “1974”.
T-62, T-63, T-64,	Design capacity from “142,700 gal” to “143,000 gal”.

Emission Unit ID	Description of Changes
T-65	
T-63, T-64	Installation date from “1974” to “2002”.
T-66, T-67	Design capacity from “202,600 gal” to “203,000 gal”.
T-68	Design capacity from “266,100 gal” to “266,000 gal”.
T-698	Description from “Final Product Storage” to “Product Storage”. Design capacity from “282,000 gal” to “280,000 gal”.
T-6797, T-6798, T-6799	Design capacity from “48,000 gal” to “50,000 gal”. Installation date from “1961” to “1994”.
T-6797, T-6799	Description from “Product Storage” to “Intermediate Storage”.
C-101, C-102	Added design capacity “168,000 gal”.
T-9016	Added design capacity “420,000 gal”.
T-9017	Added design capacity “350,000 gal”.

- IV. **Changes to Emission Units Table based upon Technical Review & Correspondence.** The following table lists changes made in the renewal permit Emission Units table (section 1.1.) based upon information supplied by the permittee in correspondence¹ received during technical review.

Emission Unit ID	Description of Changes
PMPO#4	
T-2405 (E-657)	Control device from “V-2493 dust collector” to “V-2493 venturi scrubber”.
Rx #3 Storage & Ancillary System	
T-611 (Crude Polyol Stripping)	Emission point ID from “E-19A” to “E-620”. Control device from “Steam jets for T-611, vents to E-19A” to “Steam jets for T-611, T-612 and Rx #3. Vents to H-3316”.
T-612 (Crude Polyol Stripping)	Emission point ID from “E-19A” to “E-610”. Control device from “Steam jets for T-612, vents to E-19A” to “Steam jets for T-611, T-612 and Rx #3. Vents to H-3316”.
Refining System #1	
T-649 (E-649)	Description from “Make tank” to “Crude Polyol”
T-649 (E-603S; Crude Polyol Stripping)	Added source beneath T-649 (E-649).
T-650 (E-650)	Description from “Make tank” to “Crude Polyol”
T-650 (E-603S; Crude Polyol Stripping)	Added source beneath T-650 (E-650).
T-604 (E-604)	Description from “Make tank” to “Crude Polyol” Control device from “atm vent Steam jets for T-604 can vent to E-603” to “atm vent”.
T-604 (E-603S)	Emission point ID from “E-603” to “E-603S”. Description from “Vacuum source on T-604 tank only” to “Crude Polyol Stripping”. Control device from “Atm vent steam jets for T-604, vents to E-603” to “Steam jets for T-604, T-603, T-649 and T-650. Vent to 600 Series Vacuum Jets.”
600 Series Vacuum Jet Pot (Em. Pt. ID: E-603J)	Emission unit from “T-603 jet pot” to “600 Series Vacuum Jet Pot”.

¹ Email dated March 21, 2012, from Mr. Jim White, Senior HES Manager for the permittee.

Refining System #5	
T-603 (E-603)	Emission point ID from “E-603 or E-603S” to “E-603”. Emission unit description from “Make tank Vacuum Jet” to “Crude Polyol” Control device from “atm vent. Can vent to E-603S” to “atm vent”.
T-603 (E-603S)	Added source beneath T-603 (E-603).
T-645	Emission point ID from “E-645T or E-603S” to “E-645”. Description from “Make tank Vacuum Jet” to “Crude Polyol”. Control device from “atm vent. Can vent to E-603S” to “atm vent”.
T-646	Emission point ID from “E-646T or E-603S” to “E-603S”. Description from “Make tank Vacuum Jet” to “Crude Polyol Stripping”. Control device from “atm vent. Can vent to E-603S” to “Steam jets for T-604, T-603, T-649 and T-650. Vent to 600 Series Vacuum Jets.”.
T-649	Added source beneath T-646.

V. **Changes to Permit Conditions & Attachment A based upon Technical Review & Correspondence.** The following table lists changes made in the renewal permit Emission Units table (section 1.1.) based upon information supplied by the permittee in correspondence² received during technical review.

- a. In 4.1.9 removed reference to E-5228, E-5328 and E-5428. The catalyst pots associated with these emission points have been removed.
- b. In 4.1.9 removed reference to E-2305. The material being added here is a VOC and not a solid.
- c. In 4.1.10 removed reference to E-5228, E-5328 and E-5428, for same reason as above.
- d. In 4.1.10 removed reference to E-2305, for same reason as above.
- e. In 4.2.1 removed reference to E-658. No longer can be utilized for normal production. Only emergency shutdown vent.
- f. In 4.3.1 removed reference to E-5228, E-5328 and E-5428, for same reason as above.
- g. In 4.3.1 removed reference to E-2305. The material being added here is a VOC and not a solid.
- h. In 4.4.1 removed reference to H-2443. This device is no longer utilized as a control device and permit allowance to operate with TO down has been removed by R13-2561H.
- i. In 4.4.4 removed reference to E-658 since ability to operate for normal production was removed. Only an emergency vent and covered by 4.1.6.
- j. Removed 4.4.5 e. since ability to operate in this mode was removed by R13-2561H.
- k. In first line of 8.1.15. “employee” is corrected to “employ”.
- l. In Attachment A, T-626 add under comment – vents to thermal oxidizer.
- m. In Attachment A, T-684 has comment “exempted from Reg 27 by section 5.1.” This was replaced with “Vents to thermal oxidizer.” R13-2561H , 5.1.1, now requires T-684 to vent to thermal oxidizer.
- n. In Attachment A, for C-3404 and C-3406 the common emission point is E-662. There was a row entry under E-662 for C-3404 that made it look like the emission point number for C-3406 was missing. The emission point ID row entry will be made like C-3504/C3506 and C-3604/C-3606.

VI. **Miscellaneous Changes**

- a. *Stack Testing.* Condition 3.3.1.d. has been added to the Title V “boilerplate” and the citation of authority has been revised.

² Email dated April 10, 2012, from Mr. Jim White, Senior HES Manager for the permittee.

- b. *Annual Compliance Certification Submittal.* U.S. EPA has instructed DAQ that permittee's are to submit their annual compliance certification to U.S. EPA via e-mail only (*i.e.*, no paper "hard copies" to U.S. EPA). The language of conditions 3.5.3. and 3.5.5. have been modified to provide for this new stipulation.
- c. *U.S. EPA Address Change.* The address in condition 3.5.3. is changed from "Office of Enforcement and Permits Review (3AP12)" to "Office of Air Enforcement and Compliance Assistance (3AP20)".
- d. In condition 8.1.14., in the next to last paragraph, the reference in the first sentence to "(MM01)" has been removed.
- e. In condition 8.1.14.(b)(2)(iv), the misspelled word "Maintian" is changed to "Maintain".

Non-Applicability Determinations

The following requirements have been determined not to be applicable to the subject facility due to the following:

Non-applicable Regulation	Rationale
40 C.F.R. 60 Subpart Kb	All tanks except T-626 and T-632 were found <u>not</u> to be subject to NSPS Kb since all met one of the following exemption criteria: 1. Were built before July 23, 1984, and no physical modifications or reconstructions were performed since July 23, 1984 and/or 2. Are of capacity less than 19,813 gallons and/or 3. Are of a capacity greater than 39,890 gallons, and have a maximum true vapor pressure of 0.51 psia or less. 4. Are of a capacity greater than 19,813 gallons but less than 39,890, and have a maximum true vapor pressure of 2.2 psia or less.
40 C.F.R. 63 Subparts F, G, and H (Except as Subpart H is incorporated by reference in other applicable standards).	40 C.F.R. §63.100(b) states that the provisions of subparts F, G, and H apply to chemical manufacturing process units that meet all the criteria specified in paragraphs (b)(1), (b)(2), and (b)(3) of §63.100. According to the renewal application, the facility does not manufacture as a primary product one or more of the chemicals listed in (b)(1)(i) or (b)(1)(ii) of §63.100. Therefore, Subparts F, G, and H are not applicable. However, Subpart H requirements are applicable insofar as they are incorporated by reference into other applicable standards (e.g., permit R13-2561H).
40 C.F.R. 63 Subpart EEEE	40 C.F.R. §§ 63.2338(c) and (c)(1) state the following: "The equipment listed in paragraphs (c)(1) through (4) of this section and used in the identified operations is excluded from the affected source. (1) Storage tanks, transfer racks, transport vehicles, containers, and equipment leak components that are part of an affected source under another 40 CFR part 63 national emission standards for hazardous air pollutants (NESHAP)." The following equipment is subject to the applicable requirements of 40 C.F.R. 63 Subpart PPP – Polyether Polyols Production MACT: propylene oxide storage spheres (T-9016, T-9017, C-101 and C-102); carbon filtering vessels (C-2090A and C-2090B); North Charleston propylene oxide barge loading station; and piping and associated piping components in propylene oxide distribution service. Therefore, the aforementioned sources meet the criterion at 40 C.F.R. §63.2338(c)(1) and are not subject to 40 C.F.R. 63 Subpart EEEE.
40 C.F.R. 63 Subpart FFFF "MON"	The synthetic minor HAP status for wastewater treatment defined within section 6.0 was established through minor NSR permit number R13-2561C (issued April 9, 2007). Since permit R13-2561C established this limitation before the applicable compliance date of May 10, 2008 pertaining to the referenced "MON" standard, Bayer's South Charleston facility will not be subject to this Federal Standard.
40 C.F.R. 63	Acetaldehyde (Table 1 HAP) is received as an impurity in propylene oxide

Non-applicable Regulation	Rationale
Subpart VVVVVV	and may under specific operating conditions be generated in the manufacturing process in low concentration. Acetaldehyde is a noncarcinogen and is not present in the process fluid at greater than 1.0%. Based upon these facts, the applicability criterion at 40 C.F.R. §63.11494(a)(3) is not met; therefore, Subpart VVVVVV does not apply to the facility.
40 C.F.R. 64 Compliance Assurance Monitoring (CAM)	<p>(1) <u>Emission units controlled by thermal oxidizer Y-2124</u>. None of the pollutants controlled by Y-2124 emitted by emission sources PMPO#1, PMPO#2, PMPO#3, PMPO#4, T-616, T-626, T-631, T-632, T-684, T-686, T-663, T-693, and Switch Rack #8 have potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source. Since the applicability criterion at §64.2(a)(3) is not met, CAM does not apply to these emission units.</p> <p>(2) <u>Emission units controlled by Plug Flow Reactor C-2016</u>. None of the pollutants controlled by C-2016 emitted by T-2148, T-2248, T-2348, and T-2448 have potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source. Since the applicability criterion at §64.2(a)(3) is not met, CAM does not apply to these emission units.</p> <p>(3) <u>Emission units controlled by Steam Stripper with dual flow trays C-2044</u>. None of the pollutants controlled by C-2044 emitted by T-2148, T-2248, T-2348, and T-2448 have potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source. Since the applicability criterion at §64.2(a)(3) is not met, CAM does not apply to these emission units.</p> <p>(4) <u>Emission unit controlled by Condenser EX2424 and Vacuum Jet H-2443</u>. None of the pollutants controlled by EX2424 and H2443 emitted by PMPO #4 have potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source. Since the applicability criterion at §64.2(a)(3) is not met, CAM does not apply to this emission unit.</p> <p>(5) <u>Emission unit controlled by Wet Scrubber V-2493</u>. None of the pollutants controlled by V-2493 (PM₁₀ only) emitted by T-2405 have potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source. Since the applicability criterion at §64.2(a)(3) is not met, CAM does not apply to this emission unit.</p>
Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule.	The facility has not made any changes in NSR permit revisions R13-2561G and R13-2561H that trigger a PSD modification; therefore, the requirements of the GHG tailoring rule are non-applicable to the changes under these permits that are incorporated into this renewal Title V permit.

Request for Variances or Alternatives

None.

Insignificant Activities

Insignificant emission unit(s) and activities are identified in the Title V application.

Comment Period

Beginning Date: April 23, 2012
Ending Date: May 23, 2012

All written comments should be addressed to the following individual and office:

Denton B. McDerment, PE
Title V Permit Writer
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304

Procedure for Requesting Public Hearing

During the public comment period, any interested person may submit written comments on the draft permit and may request a public hearing, if no public hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. The Secretary shall grant such a request for a hearing if he/she concludes that a public hearing is appropriate. Any public hearing shall be held in the general area in which the facility is located.

Point of Contact

Denton B. McDerment, PE
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone: 304/926-0499 ext. 1221 • Fax: 304/926-0478

Response to Comments (Statement of Basis)

No comments were received from either the public or U.S. EPA.